The role of explicit recall of meaning hypotheses in word learning (#155151)

Author(s)
This pre-registration is currently anonymous to enable blind peer-review.
It has one author.

Pre-registered on:
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1) Have any data been collected for this study already?
No, no data have been collected for this study yet.

2) What's the main question being asked or hypothesis being tested in this study?
In naturalistic language, object referents of words are not always present in the visual scene (e.g. "Remember when we lost your ball?"). Do these utterances help learning? We assess adults' cross-situational word learning (CSWL) performance with no-referent exposures (recall), comparing this performance to words for which only one exposure is given (one-shot) and for those the word's referent is confirmed in the visual set of referents.

The word learning task consists of three types of words: words that are seen exactly once (one-shot), words that are seen once with a set of visual referents and then either have referent-absent (recall) exposures or have exposures with opportunities to confirm the target referent (target), and foil words. There are 4 one-shot words, each with one exposure. There are 4 target words, each with 3 exposures (2/3 exposures are referent-free "recall" trials), and there are 6 foil words, each with 2 exposures. In all exposures, the participant is asked to type what they think the word means.

Following the learning task, participants are tested on all words with a forced choice task with 12 options. We predict that the learner will perform better on the target words than in the one-shot words, suggesting that free recall of a word label without a visual set of referent hypotheses can benefit learning.

3) Describe the key dependent variable(s) specifying how they will be measured.
Word learning accuracy on target block: performance at test on words encountered in the primary task's target word-learning block (specifically, whether the learner selects the target image that co-occurred with the word the most / the image referent selected at the first exposure for the one-shot and recall words).

4) How many and which conditions will participants be assigned to?
There are two conditions determining the exposure type for the 2nd and 3rd of the target words: free recall (referent-free) exposures and confirmation exposures. In the free recall exposures, the participants will hear the word label without seeing a set of visual referents. In the confirmation exposures, the participants will hear the word label while seeing a set of visual referents that includes the visual referent selected in the first exposure of the word. In all exposures, participants will be asked to type what they think the word means.

5) Specify exactly which analyses you will conduct to examine the main question/hypothesis.
We are interested both in the main effects of word type within participants and the interaction of word type and condition. We will run a mixed effect logistic regression model, predicting test performance by condition and word-type (target vs. one-set) with by-participant random intercepts and random slopes when possible and appropriate.
We will also analyze typed responses to measure success of explicit recall.

6) Describe exactly how outliers will be defined and handled, and your precise rule(s) for excluding observations.
Participants will be asked at the end of the experiment if there is any reason their data should be excluded (e.g., they cheated or experienced technical difficulties), and we will exclude those who report their data should be discarded.

7) How many observations will be collected or what will determine sample size? No need to justify decision, but be precise about exactly how the number will be determined.
We plan to test 40 participants in each condition on SONA.

8) Anything else you would like to pre-register? (e.g., secondary analyses, variables collected for exploratory purposes, unusual analyses planned?)
We will do an error analysis examining the test selections for words for which the participants did not select the target object. We will analyze this data for hypothesis-testing behavior, particularly with the items with multiple exposures in learning.
We will also analyze the typed responses to understand whether explicit recall actually happened.